

AMENDMENTS

In the Claims

The following is a marked-up version of the claims with the language that is underlined (“___”) being added and the language that contains strikethrough (“—”) being deleted:

1. (Currently Amended) A data management system comprising:

a plurality of storage devices individually comprising a physical storage space, wherein the physical storage space of one of the storage devices is configured to store a baseline version of a data object and the physical storage space of an other of the storage devices is configured to store a delta version of the data object; and

processing circuitry configured to control storage operations of at least, one of the storage devices, to process a restore request with respect to the data object, to access the delta version from the other of the storage devices responsive to the restore request, and to initiate communication of data of the baseline version and the delta version of the data object to a computer system, ~~wherein the processing circuitry outputs the delta version to the other of the storage devices after determining that insufficient storage capacity exists.~~ system, wherein the processing circuitry is further configured to act as a proxy to extract remotely stored delta versions.

2. (Canceled)

3. (Original) The system of claim 1 wherein a client agent, of the computer system is configured to combine the delta version with the baseline version to provide a restored version of the data object.

4. (Original) The system of claim 1 wherein the processing circuitry comprises processing circuitry of the one of the storage devices which stores the baseline version of the data object.

5. (Original) The system of claim 4 wherein the one of the storage devices is configured to receive the delta version from the computer system, and the processing circuitry is configured to forward the delta version to the other of the storage devices.

6. (Original) The system of claim 5 wherein the processing circuitry is configured to forward the delta version to the other of the storage devices responsive to a status of capacity of the one of the storage devices.

7. (Original) The system of claim 5 further comprising a database configured to store information regarding storage operations of individual ones of the storage devices, and wherein the processing circuitry is configured to access the database to obtain a location of the delta version of the data object on the other storage device responsive to the restore request.

8. (Original) The system of claim 1 wherein the processing circuitry comprises processing circuitry of a client agent associated with the computer system.

9. (Original) The system of claim 1 further comprising a local area network configured to communicate the delta version intermediate the one and the other storage devices.

10. (Original) The system of claim 1 further comprising a storage area network configured to communicate the delta version, intermediate the one and the other storage devices.

11. (Currently Amended) A data management system comprising:

a plurality of storage subsystem means individually comprising physical storage means for storing data corresponding to a plurality of data objects and processing means for controlling storage operations with respect to the respective physical storage means;

database means for tracking storage locations of data of the data objects in corresponding ones of the storage subsystem means;

wherein the processing means of one of the storage subsystem means comprises means for controlling the storage of a baseline version of a data object using the respective physical storage means corresponding to the one of the storage subsystem means and for initiating the storage of a delta version of the data object using an other of the storage subsystem means;

wherein the database means comprises means for storing information regarding the storage location of the delta version using the other of the storage subsystem means; and

wherein the processing means outputs the delta version to the other of the storage subsystem means after determining that insufficient storage capacity exists at the one of the storage subsystem means to store the delta ~~version~~ version, wherein the processing means is further configured to verify storage of the baseline version of data with a manager means for tracking purposes using the database means.

12. (Original) The system of claim 11 wherein the processing means of the other of the storage subsystem means comprises means for uncompressing data of the delta version, and for initiating communication of the uncompressed data of the delta version to the one of the storage subsystem means.

13. (Original) The system of claim 11 wherein the processing means for the one of the storage subsystem means comprises means for accessing the database, and means for forwarding a request to the other of the storage subsystem means to obtain the delta version from the other of the storage subsystem means responsive to the accessing the database.

14. (Original) The system of claim 11 wherein the processing means for the one of the storage subsystem means comprises means for generating a restored version of the data object using the baseline version and the delta version, and for outputting the restored version of the data object to a computer system.

15. (Currently Amended) A data management system storage device comprising:
an interface configured to communicate data with respect to other storage devices of a data management system, and to communicate data of a data object with respect to a computer system;
a physical storage space configured to store a baseline version of the data object at an initial moment in time; and
processing circuitry configured to receive a request to store a delta version of the data object at a subsequent moment in time after the initial moment in time, to obtain information regarding a capacity of the storage device, and to initiate storage of the delta version of the data object using one of the other storage devices of the data management system responsive to the analysis of the information, wherein the processing circuitry outputs the delta version to the one of the other storage devices after determining that insufficient storage capacity exists at the storage devices to store the delta ~~version~~.
version, the processing circuitry being further configured to verify storage of the baseline version of the data object with a cell manager for tracking purposes using a tracking database.

16. (Original) The device of claim 15 wherein the processing circuitry is configured to access a database to identify a storage location of the delta version, and to output a request to access the delta version to the other of the storage devices responsive to the accessing the database.

17. (Original) The device of claim 15 wherein the processing circuitry is configured to combine the delta version with the baseline version to generate a restored version of the data object and to control communicating of the restored version of the data object to the computer system.

18. (Original) The device of claim 15 wherein the processing circuitry is configured to initiate the storage using the other of the storage devices responsive to the obtained information indicating insufficient capacity to accommodate storage of the delta version.

19. (Currently Amended) An article of manufacture comprising:
a processor-usable tangible medium comprising processor-usable code configured to cause processing circuitry of one of a plurality of storage devices of a data management system to:

receive a request to store a baseline version of a data object;

store the baseline version using physical storage space of the one of the storage devices;

receive a request to store a. delta version of the data object after the effecting storage of the baseline version:

access information regarding a status of the one of the storage devices; and

determine that the one of the storage devices has insufficient storage capacity to store the delta version: and

store the delta version using an other of the storage devices of the data management system after determining that the one of the storage devices has insufficient storage capacity to store the delta version: version, the processor-usable tangible medium being further configured to verify

storage of the baseline version of the data object with a cell manager for tracking purposes using a tracking database.

20. (Original) The article of claim 19 wherein the processor-usable code is configured to cause the processing circuitry to access the delta version stored using the other of the storage devices, and to control communication of data of the baseline version and the delta version to a computer system.

21. (Original) The article of claim 20 wherein the processor-usable code is configured to cause the processing circuitry to combine the delta version and the baseline version before the communication.

22. (Original) The article of claim 19 wherein the processor-usable code is configured to cause the processing circuitry to initiate the storage responsive to the accessed information indicating insufficient capacity of the one of the storage devices to accommodate storage of the delta version.

23. (Currently Amended) A data management method comprising:
receiving a baseline version of a data object of a computer system using one of a plurality of storage devices of a data management system;

storing the baseline version using the one of the storage devices after the reception of the baseline version:

receiving a request using the one of the storage devices, wherein the request comprises a request to store a delta version of the baseline version; analyzing a capacity of the one of the storage devices; determining, that the one of the storage devices has insufficient storage capacity to store the delta version; and

storing the delta version using an other of the storage devices after determining that the one of the storage devices has insufficient storage capacity to store the delta ~~version~~; version; and
verifying storage of the baseline version of the data object with a cell manager for
tracking purposes using a tracking database.

24. (Original) The method of claim 23 further comprising combining the delta version with the baseline version providing a restored version of the data object.

25. (Original) The method of claim 24 wherein the combining comprises combining using the one of the storage devices.

26. (Original) The method of claim 24 wherein the combining comprises combining using a client agent of the computer system.

27. (Original) The method of claim 24 further comprising maintaining a database of a stored location, of the delta version, and wherein the combining comprises accessing the database using the one of the storage devices to identify the stored location of the delta version.

28. (Original) The method of claim 27 further comprising: outputting a request from the one of the storage devices to the other of the storage devices responsive to the identification of the stored location; and communicating the delta version from the other of the storage devices to the one of the storage devices responsive to the request.

29. (Original) The method of claim 23 further comprising forwarding the delta version from the one of the storage devices to the other of the storage devices.

30. (Original) The method of claim 29 wherein the forwarding comprises forwarding responsive to the analyzing determining that an insufficient capacity of the one of the storage devices exists.

31. (Previously Presented) The system of claim 1 wherein the computer system is a host device external of the data management system.

32. (Previously Presented) The system of claim 1 wherein the computer system, is a host device external of the data management system and the computer system is configured to execute an application program to generate the baseline and delta versions of the data object.

33. (Previously Presented) The system of claim 1 wherein the data object comprises a data file.

34. (Previously Presented) The system of claim 1 wherein the data object comprises a data file and the delta version of the data file only comprises changes made to the baseline version of the data file.

35. (Previously Presented) The system of claim 34 wherein the delta version of the data file does not include content of the data file which is unchanged with respect to the baseline version of the data file.

36. (Previously presented) The device of claim 15 wherein the processing circuitry is configured to obtain the information regarding the capacity of the storage device responsive to the request.

37. (Previously Presented) The article of claim 19 wherein the processor-usable medium comprises processor usable-code configured to cause processing circuitry of the one of the storage devices to access the information regarding the status comprising capacity information of the one of the storage devices responsive to receiving the request to store the delta version, and wherein the initiation of the storage of the delta version responsive to analysis of the capacity information.

38. (Previously Presented) The article of claim 19 wherein the code to initiate the storage of the delta version using the other of the storage devices responsive to the information indicating that the one of the storage devices has insufficient capacity to store the delta version.

39. (Previously Presented) The article of claim 19 wherein the processor-usable medium comprises processor usable-code configured to cause processing circuitry of the one of the storage devices to initiate the storage of the delta version using the other of the storage devices to provide increased storage capacity of the data management system.

40. – 41. (Canceled)